WHAT IS CLAIMED IS:

1. A biocompatible connective tissue repair composition comprising:

demineralized bone powder, and,

a carrier comprising a liquid poloxamer solution or a solid poloxamer dissolved in a solvent, whereby said carrier achieves reverse phase characteristics when mixed with the demineralized bone powder.

2. The composition of claim 1, whereby the carrier causes the composition to be substantially liquid at 0 °C., and substantially solid at 35° C.

3. The composition of claim 1 which has a first viscosity at 0° C., and a second viscosity at 35° C., wherein the second viscosity is at least twice as great as the first viscosity.

4. The composition of claim 1, wherein carrier comprises a solid poloxamer dissolved in a solvent, and the poloxamer is poloxamer 407.

5. The composition of claim 4 wherein the solvent is sterile water.

6. The composition of claim 5 wherein 25 weight percent of the poloxamer 407 is dissolved in 75 weight percent of the sterile water.

7. The composition of claim 1, wherein 30 weight percent of the bone powder is dispersed in 70 weight percent of the carrier.

8. The composition of claim 1, wherein 50 weight percent of the bone powder is dispersed in 50 weight percent of the carrier.

9. The composition of claim 1 wherein the bone powder comprises particles with a median length to a median thickness ratio of about 1.742:1, a mean length of 0.25-1 mm (250-1,000 microns), and a mean thickness of about 0.5 mm (500 microns).

10. A biocompatible connective tissue repair composition comprising:

a therapeutic material, and,

a carrier comprising a means for achieving reverse phase characteristics.

11. The composition of claim 10, wherein the therapeutic material is osteoinductive, osteoconductive, or osteoinductive and osteoconductive.

12. The composition of claim 10, wherein the therapeutic material is alloplastic, xenogeneic, allogeneic, or autogenic.

13. The composition of claim 10, whereby the means for achieving reverse phase characteristics causes the composition to be substantially liquid at 0°C., and substantially solid at 35°C.

14. The composition of claim 10 which has a first viscosity at 0° C., and a second viscosity at 35° C., wherein the second viscosity is at least twice as great as the first viscosity.

15. The composition of claim 10, wherein the means for achieving reverse phase characteristics comprises a poloxamer.

16. The composition of claim 15, wherein the means for achieving reverse phase characteristics comprises poloxamer 407.

17. The composition of claim 10, wherein the means for achieving reverse phase characteristics comprises a block copolymer.

18. The composition of claim 17, wherein the means for achieving reverse phase characteristics comprises a poly(oxyalkylene) block copolymer.

19. The composition of claim 18, wherein the means for achieving reverse phase characteristics comprises a poly(oxyethylene)-poly(oxypropylene)-poly(oxyethylene) triblock copolymer.

20. The composition of claim 19, wherein the triblock copolymer comprises a formula:

$$HO(CH_2CH_2O)_{98}(CHCH_2O)_{67}(CH_2CH_2O)_{98}H$$
$$\Big|$$
$$CH_3 \ .$$

21. The composition of claim 17, wherein the block copolymer is a solid and is dissolved in a biocompatible solvent.

22. The composition of claim 21, wherein the biocompatible solvent is sterile water.

23. The composition of claim 21, wherein 30 weight percent of the therapeutic material is dispersed in 70 weight percent of the carrier.

24. The composition of claim 21, wherein 50 weight percent of the therapeutic material is dispersed in 50 weight percent of the carrier.

25. The composition of claim 10 wherein the therapeutic material comprises bone powder, and the bone powder comprises particles with a median length to a median thickness ratio of about 1.742:1, a mean length of 0.25-1 mm (250-1,000 microns), and a mean thickness of about 0.5 mm (500 microns).

26. A method to facilitate the development of bone tissue, said method comprising:

providing the composition of claim 10; and, placing the composition in a bony defect of a mammal.

27. The method of claim 26, further comprising a step of placing a prosthetic object in the bony defect.

28. The method of claim 27, wherein the composition coats a portion of the prosthetic object, and the step of placing the composition and the step of placing a prosthetic object are contemporaneous.